

REMARKS

At the time of the second Office Action in the Second Request for Continued Examination (RCE), the application contained claims 1-9 of which claim 1 was the sole independent claim.

In that second Office Action, all of the prior rejections under 35 U.S.C. §103 and 112 were withdrawn. However, all of the claims were newly and non-finally rejected as follows:

1. Claims 1-7 and 9 were rejected as obvious under 35 USC §103(a) over RAVENSCROFT (5,702,418), newly cited, in view of HAYASHI et al. (6,607,539), previously cited; and
2. Claims 6-8 were rejected as obvious under 35 USC §103(a) over RAVENSCROFT in view of HAYASHI et al. and further in view of BARRY et al. (6,277,126) , previously cited.

The present invention is directed to a self expanding stent 20 having anchor members 52 adjacent its ends, and the stent is on a core wire 14. In the present invention, the improvement is in the releaseable retaining rings 19 and 21 which extend around the stent at the anchor members so as to compress the stent and the anchor members into gap 42 between the cylindrical members 16 and 18 (as seen in the drawing Replacement Sheets filed concurrently with this reply) to retain the stent on the core wire 14. Because of the presence of the retaining rings at the anchor members, it is possible in the present invention to selectively release the distal anchor members 52 as shown in FIG. 5, by first releasing the distal retaining ring 21. If it is discovered that the stent has been deployed in an incorrect location, the distal anchor members can be retracted simply by withdrawal of the deployed distal anchor members back into the outer catheter 3 to retract the distal anchor members into their original non-deployed position in the catheter 3. This permits the stent to be repositioned to the correct position. This is possible because the proximal anchor members 52 have been retained in the gap 42 between the tubular members 16 and 18 by the proximal retaining ring 19 which has not yet been released. Thus, the proximal anchor members 52 continue to hold the stent in place and prevent it from movement during the retraction and repositioning procedure. When

repositioned, the catheter 3 is again withdrawn in the proximal direction so that the distal anchor members 52 and distal end of the stent will again redeploy as shown in FIG. 5.

When the stent has finally been deployed in its desired location in the vessel 58, the proximal retaining ring 19 is released as shown in FIG. 6 to permit the stent to fully expand, and the catheter, **released retaining rings 19 and 21** and core wire are **removed** as shown in FIG. 7. Removal of the released retaining rings 19 and 21 is possible because they are not affixed to the stent 20 and are coupled to the elongated core wire 14 by the conductors 28-30. See page 11, line 8, page 13, lines 13-15 and FIG. 7.

The newly cited and relied upon RAVENSCROFT discloses a stent delivery catheter that includes an elongated core member 14 with proximal and distal cylindrical rings 23 on the core member as best seen in FIGS. 2 and 3. Upon distal displacement of the rings 23, the distal faces thereof engage proximal surfaces of distally adjacent overlapping twisted portions 20b of a self expanding stent 20 to urge distal displacement of the stent 20. Conversely, upon proximal displacement of the rings 23, proximal faces of the rings engage distal surfaces of the proximally adjacent overlapping twisted portions 20b of the stent to urge proximal displacement of the stent 20.

In the last Office Action, the position was taken that the cylindrical rings 23 define a gap within which the overlapping twisted portions 20b of the stent are located to permit distal or proximal movement of the stent in the outer sheath 24, and that the twisted portions 20b constitute an anchor member as claimed. However, it is admitted in the last Office Action that RAVENSCROFT fails to disclose or suggest any actuatable retaining rings as in the present claimed invention to hold the self expanding stent 20 in its compressed condition once it has moved out of the sheath 24. HAYASHI et al. has been relied upon for this aspect of the invention.

HAYASHI et al. also discloses a self expanding stent delivery system in which the self expanding stent 15 is compressed onto an elongated core 20, and actuatable retaining rings 27 or 127 are disposed about the stent to retain the stent in a compressed configuration on the core. When it is desired that the stent self expand from its compressed condition, the retaining rings 127 are severed by an electric current which passes through conductors 25, 26 and a resistive wire loop 30 or 130 to sever the retaining rings 127 as seen in FIGS. 5A and 5B of HAYASHI et al.

The position is taken in the last Office Action that it would be obvious to one skilled in the art to modify the RAVENSCROFT delivery device to include the actuatable retaining rings of HAYASHI et al. However, of significance, it must be noted that all of the retaining rings 27 or 127 of HAYASHI et al. are **stitched to the stent or graft 15 and knotted** at 28 as shown for example in FIGS. 2 and 5 and as set forth at col. 3, lines 28-30 of HAYASHI et al. Accordingly, once the retaining rings 27 or 127 of HAYASHI et al. have been activated and severed to permit the stent or graft to expand, the retaining rings must remain with the expanded stent in the blood vessel and they cannot be removed with the core 20 of HAYASHI et al.

In contrast, in the present invention once the retaining rings 19 and 21 have been actuated and severed, all of the retaining rings are then removed with the core through the catheter as seen in FIGS 5-7 of the present application. Claim 1 has been amended to set forth such retaining ring removal and new dependent claim 21 has been added to further set forth details of such removal. Such removal as set forth in claim 1 as well as the subject matter in claim 21 are clearly supported by the original specification at page 11, line 8, page 13, lines 13-15 and FIG. 7.

It is respectfully submitted, that even when the RAVENSCROFT disclosure is modified by the teachings of HAYASHI et al., a self-expanding stent and stent delivery system still does not result in which a retaining ring is removable from the released stent as set forth in amended claim 1 and new claim 21.

Also, in the last Official Office Action, proposed revisions to the drawings that were submitted in the previous reply mailed December 5 and received by the Patent and Trademark Office on December 7, 2005 were indicated to be acceptable. Accordingly, formal Replacement Sheets containing those approved revisions have been separately submitted concurrently herewith under a Submission of Replacement Drawings.

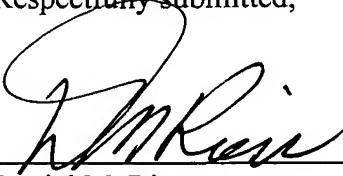
For the above reasons, it is respectfully submitted that all of the claims remaining in the present application, claims 1-9 and 21, are in condition for allowance. Accordingly, favorable reconsideration and allowance are requested.

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Respectfully submitted,

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